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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,565	04/20/2001	William McFarland	P 0269521 ATH-025(u)	1458

27498 7590 06/14/2005

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EXAMINER	
ODOM, CURTIS B	
ART UNIT	**PAPER NUMBER**
2634	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/839,565	MCFARLAND, WILLIAM	
	Examiner	Art Unit	
	Curtis B. Odom	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-92* is/are pending in the application.

4a) Of the above claim(s) *26-78* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,7,10,11,14,19,22,23 and 79-92* is/are rejected.

7)☒ Claim(s) *2-5,8,9,12,13,15-18,20,21,24 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 80-82 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Regarding claims 80-82, claim 80 recites the limitation "wherein the second particular number of carriers and the second particular symbol rate are identified in a header portion of the group of symbols transmitted at the first particular number of carriers and the first particular symbol rate". However, after reviewing the specification, particularly page 8, line 13-page 9, line 30, it is the understanding of the examiner that the particular number of carriers and the particular symbol rate identified in the header of a packet refer to the current packet being processed (the packet which includes the header), not a future/subsequent packet.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 6, 7, 14, 19, 79, and 83-92 are rejected under 35 U.S.C. 102(e) as being anticipated by van Nee (U. S. Patent No. 6, 175, 550).

Regarding claim 1, van Nee discloses a method of communicating between a transmitter and a receiver in a wireless multicarrier system comprising the steps of:

setting (column 4, line 31-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter an initial number of carriers and an initial symbol (data) rate at which symbols are transmitted from the transmitter to the receiver, wherein the symbol rate is equivalent to the symbol duration (column 3, lines 35-52);

transmitting (Fig. 1, block 24, column 6, lines 35-40) a first group of symbols using the initial number of carriers and the initial symbol rate;

changing (column 4, line 1-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter the rate at which symbols are transmitted from the transmitter to the receiver from

the initial symbol rate to a subsequent symbol rate that is different than the initial symbol rate (column 7, line 62-column 8, line 19, wherein the symbol (data) rate is increased or decreased based on feedback from the receiver; and

transmitting (Fig. 1, block 24) a second group of symbols using the initial number of carriers and the subsequent symbol rate.

Regarding claim 6, van Nee discloses a method of communicating between a transmitter and a receiver in a wireless multicarrier system comprising the steps of:

setting (column 4, line 31-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter an initial number of carriers and an initial symbol rate at which symbols are transmitted from the transmitter to the receiver;

transmitting (Fig. 1, block 24, column 6, lines 35-40) a first group of symbols using the initial number of carriers and the initial symbol rate;

changing (column 4, line 1-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter the number or carriers in active use from the initial number of carriers to a subsequent number of carriers that is different than the initial number of carriers (column 7, line 62-column 8, line 19 and column 9, line 42-column 10, line 33), wherein the number of carriers are changed based upon feedback from the mobile station; and

transmitting (Fig. 1, block 24) a second group of symbols using the subsequent number of carriers.

Regarding claims 7, which inherits the limitations of claim 6, van Nee discloses the step of transmitting the second group of symbols transmits at the initial symbol rate (column 3, line 42-column 10, line 16), wherein there is no change of symbol rate.

Regarding claim 14, van Nee discloses a method of communicating between a transmitter and a receiver in a wireless multicarrier system comprising the steps of:

setting (column 4, line 31-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter an initial number of carriers and an initial symbol rate at which symbols are transmitted from the transmitter to the receiver;

transmitting (Fig. 1, block 24, column 6, lines 35-40) a first group of symbols using the initial number of carriers and the initial symbol

rate;

changing (column 4, line 1-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter the rate at which symbols are transmitted from the transmitter to the receiver from the initial symbol rate to a subsequent symbol rate that is different than the initial symbol rate (column 7, line 62-column 8, line 19), wherein the symbol (data) rate is increased or decreased based on feedback from the receiver;

changing (column 4, line 1-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter the number or carriers in active use from the initial number of carriers to a subsequent number of carriers that is different than the initial number of carriers (column 7, line 62-column 8, line 19 and column 9, line 42-column 10, line 33), wherein the number of carriers are changed based upon feedback from the mobile station; and

transmitting (Fig. 1, block 24, column 10, lines 17-33) a second group of symbols using the subsequent number of carriers and the subsequent symbol rate, wherein both the symbol and number of carriers can be dynamically scaled (changed) for a subsequent transmission.

Regarding claim 19, which inherits the limitations of claim 14, van Nee discloses the second group of symbols transmits at the initial symbol rate (column 10, lines 17-33), wherein the symbol rate is the fixed operating parameter.

Regarding claims 79, van Nee discloses method of communicating from a first transceiver in a wireless multicarrier system comprising the steps of:

transmitting (Fig. 1, block 24, column 4, line 31-column 5, line 5 and column 5, line 58-column 6, line 40) from the first transceiver a group of symbols using a first particular number of carriers and a first particular symbol rate during a first period of time; and

transmitting (column 7, line 40-column 8, line 19 and column 9, line 42-column 10, line 33) from the first transceiver another group of symbols using a second particular number of carriers and a second particular symbol rate during a subsequent period of time, wherein at least one of the second particular number of carriers and the second particular symbol rate is different than the first particular number of carriers and the first particular symbol rate.

Regarding claim 83, which inherits the limitations of claims 79, van Nee discloses both the second particular number of carriers and the second particular symbol rate are different than the first particular number of carriers and the first particular symbol rate (column 7, line 40-column 8, line 19 and column 9, line 42-column 10, line 33), wherein the number of carriers and symbol rate are increased or decreased based on feedback from the receiver.

Regarding claim 84, which inherits the limitations of claims 83, van Nee discloses the second particular number of carriers is greater than the first particular number of carriers and the second particular symbol rate is greater than the first particular symbol rate (column 7, line 40-

column 8, line 19 and column 9, line 42-column 10, line 33), wherein the number of carriers and symbol rate can be increased or decreased based on feedback from the receiver.

Regarding claim 85, which inherits the limitations of claim 79, van Nee discloses the step of transmitting the group during the first period of time and transmitting the second group during the subsequent period of time are repeated in a cyclic manner column 7, line 40-column 8, line 19 and column 9, line 42-column 10, line 33), wherein the second group is repeatedly transmitted after the first group based on feedback from the receiver in a cyclic manner.

Regarding claim 86, which inherits the limitations of claim 1, van Nee discloses changing the rate at which symbols are transmitted occurs on a dynamic basis (column 10, lines 17-33).

Regarding claim 87, which inherits the limitations of claim 86, van Nee discloses the step of changing the rate at which symbols arc transmitted occurs on a packet-by-packet basis (column 4, line 18-column 5, line 5), wherein each coding block represents a packet and the parameters are scaled for each coding block.

Regarding claim 88, which inherits the limitations of claim 6, van Nee discloses changing the number or carriers in active use occurs on a dynamic basis (column 10, lines 17-33).

Regarding claim 89, which inherits the limitations of claim 88, van Nee discloses the step of changing the number of carriers in active use occurs on a packet-by-packet basis (column 4, line 18-column 5, line 5 and column 5, line 59-column 6, line 23), wherein each coding block represents a packet and the parameters are scaled for each coding block.

Regarding claim 90, which inherits the limitations of claim 14, van Nee discloses the step of changing the rate at which symbols are transmitted occurs on a dynamic basis and the step of changing the number of carriers inactive use occurs on a dynamic basis (column 10, lines 17-33).

Regarding claim 91, which inherits the limitations of claim 90, van Nee discloses the step of changing the rate at which symbols are transmitted occurs on a packet-by-packet basis and the step of changing the number o f carriers in active use occurs on a packet-by-packet basis (column 4, line 18-column 5, line 5 and column 5, line 59-column 6, line 23), wherein each coding block represents a packet and the parameters are scaled for each coding block.

Regarding claim 92, which inherits the limitations of claim 7, van Nee discloses the step of transmitting the group of symbols from the first transceiver transmits as the group of symbols a plurality of packets and the step of transmitting the another group of symbols from the first transceiver transmits as the another group of symbols another plurality of packets (column 4, line 18-column 5, line 5 and column 5, line 59-column 6, line 23), wherein each transmitted coding block represents a packet and the parameters are scaled for each coding block (packet). The coded blocks in the second transmission are scaled based upon feedback from the receiver after the first transmission of coded blocks

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 10, 11, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Nee (U. S. Patent No. 6, 175, 550) in view of Uesugi (U. S. Patent No. 6, 276, 297).

Regarding claims 10 and 22, van Nee discloses the step of changing in the transmitter the number of carriers in active use includes the step of changing an iFFT size of an iFFT in the transmitter coupled to a parallel to serial converter (column 4, lines 58-60 and column 6, lines 10-23), but van Nee does not disclose the step changing a serializer control signal to change inputs of the parallel to serial converter that is coupled to the iFFT in the transmitter to also change in the transmitter the number of carriers in active use.

Uesugi discloses a method of varying both the iFFT size and parallel to serial inputs to vary the number of carriers in active use in a transmitter (column 5, line 5-column 6, line 33). Therefore, it would have been obvious to one skilled in the art at the time the invention was made that there are numerous methods to vary the number of carriers used for transmission. It would have been also been obvious to one of ordinary skill in the art at the time the invention was made that since van Nee also includes a parallel to serial converter coupled to the iFFT that the method of van Nee for varying the number of carriers could have been modified by the teachings of Uesugi to change the inputs of the converter to allow the variation of the data rate of transmission by varying the number of carriers used in transmission which increased flexibility in the receiver.

Regarding claims 11 and 23, van Nee discloses the step of changing in the transmitter the number of carriers in active use includes the step of changing an iFFT size of an iFFT in the transmitter (column 5, line 5-column 6, line 33), but van Nee does not disclose the step of

changing in the transmitter the number of carriers in active use includes the step of changing an iFFT size of an iFFT in the transmitter by a factor that is a power of two.

Uesugi discloses the step of changing in the transmitter the number of carriers in active use includes the step of changing an iFFT size of an iFFT in the transmitter by a factor that is a power of two (column 5, lines 5-10 and column 6, lines 17-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of van Nee with the teachings of Uesugi since Uesugi states that changing the iFFT size by a power of two reduces the total number of operations of the iFFT thereby reducing power consumption (column 5, lines 5-10).

Allowable Subject Matter

7. Claims 2-5, 8, 9, 12, 13, 15-18, 20, 21, 24, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
June 6, 2005

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